

## **ABSTRACT**

An invention is disclosed whereby a wireless network node, equipped with two or more radio transceivers statically tuned to non-interfering frequency channels, can make decisions regarding which channel to use when communicating with a neighboring wireless node. A multi-radio unification protocol implemented in a wireless node coordinates the use of multiple wireless network interface cards and provides a virtual layer that hides the multiple physical network interfaces from higher layers of a node's network protocol stack. The invention is applicable to wireless networks generally, including those in which some nodes do not have multiple radios or do not recognize the multi-radio unification protocol. The invention makes possible simultaneous transmissions using available channels, thereby reducing interference and delay while increasing the overall capacity of the network.